

To: Gary Flamm

Subject: California Report on Outdoor Lighting

Date Sent: Thursday, August 22, 2002

Mr. Gary Flamm  
California Energy Commission

Dear Mr. Flamm

I am writing you as President-elect of the Astronomical League, a federation of 257 astronomical societies with over 20,000 members. A couple weeks ago, we held our annual conference, and during our Executive Council meeting, we discussed the subject of light pollution. The members of our council gave me a unanimous vote of approval to do all possible to address these serious problems. Additionally, a relatively large number of League members are from California, and they are also deeply concerned about excessive outdoor lighting.

First, we would like to thank you for your work. We have received many reports about your timely efforts to control energy waste from poorly designed outdoor lighting. This is clearly a step in the right direction, and again, we thank you for this important progress.

Energy waste from light pollution impacts more than astronomers. Poor quality nighttime lighting is the main cause of this problem. Such obtrusive lighting also causes glare, light trespass, and wastes a great deal of energy. It reduces visibility, rather than enhancing our nighttime environment. Glare, for example, is a particular problem for our country's aging population. Why should we accept all this bad and wasteful outdoor lighting!

By promoting responsible outdoor lighting, we can reduce energy waste, control glare, stop most of the obtrusive light trespass, improve visibility and safety, and preserve the beauty of our night skies. By controlling energy waste, we save dollars and reduce atmospheric pollution. We believe that solutions to the problems of light pollution are simple, and that everyone, including the public, benefits from these solutions.

Numerous states have taken action and passed laws to control light pollution. In 1999 for example, then Governor George W. Bush of Texas signed a light control bill into law. In addition, there has been considerable media coverage about these issues in magazines like Time, Science, Audubon, and others. This clearly shows a growing awareness and concern about the problem.

Our recommendation to you is to please continue your efforts to save energy in outdoor lighting. How can this be done? We must learn to use the right amount of light, when it is needed, and where it is needed. The California Energy Commission can set the right standards for others to follow.

Lighting Zones are a great way to control waste, and the IESNA has already addressed LZs in past recommendations. We support lighting levels as described in the IESNA's RP-33, Lighting for Exterior Environments, although they don't go nearly far enough. Why should a rural area be lit as bright as a large inner city? Obviously, lighting zones make good common sense. Time controls can also be used. Why light up an area when there are no people present?

Shielding is another way to save energy. Full cutoff lighting is best, and shields can control light trespass problems. A large refinery in Texas, ran a test and found that by installing shields (converting to full cutoff fixtures) the glare was greatly reduced. Also, the shields reflected more light to the area they were trying to light. As a result, they began a project to convert 20,000 refinery lights to shielded, FCO, with wattage reduced by 50 percent. The Refinery will save nearly \$200,000 in the first year after the conversion is complete. If this is good enough for a refinery, couldn't some of us consider taking similar actions?

I have been personally studying outdoor lighting for more than five years, and joined the IESNA as well as the International Commission on Lighting (CIE). Win-win solutions have been developed that provide improved safety and conserve energy.

Please keep up the good work and let me know if we can help.

Respectfully,

Bob Gent  
President-elect, Astronomical League